

GENERAL NOTES

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THE CASE OF THE MISSING H: *HELICONIUS CHARITHONIA* (L., 1767), NOT “*HELICONIUS CHARITONIA* (L., 1767)”

Additional key words: Nymphalidae, Heliconiini, nomenclature, taxonomy, spelling.

Systematic nomenclature is perhaps the only truly typological part of our science, since it depends on published historical records and not on the vagaries of organismal variation. There are correct names, and there are incorrect names. This little note is about spelling, and thus may seem trivial and pedantic, but there are four reasons why my topic is noteworthy (if you will). First, the taxon in question is the type species of the celebrated genus *Heliconius*, which has enjoyed paradigmatic status in ecological genetics, historical biogeography, and community ecology for several decades. Second, the incorrect spelling of the name is in wide use: a quick scan through literature from the last ten years yields more than a dozen uses of *charitonia* and no uses of *charithonia*. This raises point three: as electronic reference data bases become more prevalent, alternate spellings of names must be eliminated, to promote efficient searching. Lastly, the story behind the confusion is entertaining, if nomenclatorially and historically convoluted.

Papilio Heliconius charithonia was described as a species by Linnaeus in the 12th edition of *Systema Naturae* (1767), but, because he considered all butterflies to belong to the genus *Papilio*, the infrgeneric name, *Heliconius* is invalid. (Interestingly, if *Heliconius* L. were valid, the type species would be *H. ricini* L., 1758 and not *H. charithonia*, L. 1767, but that's another story.) For almost 150 years, authors attributed the name *Heliconius* to Latreille (either 1804 or 1805), with a variety of type species including *charitonia* (Fabricius, 1775!).

In 1933, the great historian of lepidopteran systematic literature, Francis Hemming, recognized that *Heliconius* (Latreille, 1804) lacked a valid type species, and selected *charitonia* Fabr., which he equated with *charithonia* L. (Hemming 1933a). Immediately after publication of this designation, Hemming apparently discovered a prior binomial usage of *Heliconius* by Kluk (1802). He quickly published a new designation, this time listing *charitonia* L. as the type species, without the “h” (Hemming 1933b). By 1934, however, Hemming had returned to *charithonia*, and clearly acknowledged the differences in spelling between the early authors, indicating his preference for the Linnaean use of the “h.” This decision is reiterated in his posthumous *magnum opus* (Hemming 1967).

Apparently unaware of Hemming's efforts, Comstock and Brown specifically addressed the problem of the “h” again in 1950. They pointed out that the index of the 12th edition of *Systema Naturae* (1767) makes reference to *charitonia*, as does the 13th edition (1790). They argue further that the name is etymologically derived from *charites*, Latinized from the Greek name for the Graces, and thus logically not containing the “h.” They claimed that since the two spellings are of equal age, and since no other revisers had addressed the issue, they could choose *charitonia* as the proper spelling. Amazingly, in their next paragraph, they coined yet another version of the name, *charitonius*, to produce gender agreement between the genus and the species. This paper appears to be the source of current ubiquitous usage of *charitoni-* (with the -a or -us suffix variously applied).

Five years after Comstock and Brown tried to lay it to rest, the “h” issue rose up yet again in a case submitted to the International Commission on Zoological Nomenclature regarding the priority of names for a crustacean (Holthuis & Hemming 1956). It seems that *Sicyonia thamar*, the name given by Hübner (1816) to what we recognize today as *Heliconius sara* (Fabr. 1793), had priority over a generic name used for a well known genus of prawn (*Sicyonia*, Milne Edwards 1830). Under its plenary powers, the Commission decided to sink *Sicyonia* Hübner, in deference to the request to retain the popular usage of the name for the prawn, and because the butterfly name was not in use, the

species described by Hübner being considered to belong to *Heliconius*. In an addendum to this decision, Hemming, the Secretary of the Commission, officially rejected *Heliconius* Latreille, 1804; *Apostrophia* Hübner, 1816; *Heliconia* Godart, 1819; and *Heliconius* L., 1758. He also placed *Heliconius* Kluk, 1802 on the Official List of Generic Names in Zoology, and, crucial to the point of this note, he put *charithonia* L., 1767 on the Official List of Specific Names in Zoology (Melville & Smith 1987).

Decisions made under the plenary powers of the I.C.Z.N. overrule previous arguments about nomenclature, and thus clearly invalidate Comstock and Brown's (1950) arguments, whether they bear merit or not. It is arguable, however, that Comstock and Brown's views are based on poor interpretations of the International Code of Zoological Nomenclature (Ride et al. 1985). Even if their dubious claim to First Reviser status is valid, giving them the prerogative to choose between alternate spellings in the original description (Article 24(C)), the Code recommends that the spelling that appears first be chosen when it is not obviously wrong or will not fail to serve universality of nomenclature (Recommendation 24(A)). Prior to Comstock and Brown's dictum, most major *Heliconius* systematists (Kirby 1871, Riffarth 1901, Stichel 1906, Eltringham 1916, Seitz 1924, Neustetter 1929, and of course, Hemming 1933a, 1933b, 1934) used *charithonia*. Furthermore, it seems more appropriate to choose the name accompanying the original description than the name listed subsequently in an index, which might have been less subject to editorial scrutiny. Linnaeus' personal copy of the 12th edition of *Systema Naturae* (1767), although filled with hand-written corrections and amendments, shows no suggestion that Linnaeus viewed *charithonia* as a misprint in his text.

With regards to the etymology of the name, there is no extrinsic evidence to suggest that *charitonia* is derived from *Charites*. As Turner (1967) pointed out, many 18th century names do not derive unambiguously from Latin or Greek roots. Turner also chided authors for inappropriate masculinization of specific names to bring them into gender agreement with generic names. Article 31(B(i)) of the Code (Ride et al. 1985) explicitly states that names stand as first published, regardless of gender, unless the author specifically stated that the species name is an adjective modifying the generic name, which Linnaeus did not.

So there we have it. *Heliconius charithonia*, described by Linnaeus (1767), designated as type species of the genus by the rightful First Reviser, Hemming (1933b), and placed on the I.C.Z.N. official list of generic and specific names by Holthuis and Hemming (1956). Yet every major guide to butterflies published since then has followed Comstock and Brown (1950), listing the species as "*charitonia*," (or even "*charitonius*," employing their demonstrably incorrect masculinization). I hope that this minor, yet irritating detail will be corrected in future publications.

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NATIVE PIERINE BUTTERFLY (PIERIDAE) ADAPTING TO NATURALIZED CRUCIFER?

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Native butterflies encounter naturalized plants related to their hosts as one consequence of Palearctic weeds spreading throughout North America. Sometimes these plants are incorporated into the butterfly diet and permit a longer flight season (e.g., *Pieris napi microstriata* on watercress: Shapiro 1975; *Papilio zelicaon* on sweet fennel: Sims 1983, Tong & Shapiro 1989, Shapiro in press). In other cases, females do not lay eggs on the naturalized plant so that it is not used, even though it can support complete larval development (e.g., *Colias philodice* and crown vetch: Karowe 1990). A third alternative